

What is claimed is:

1. A radio transmitting apparatus for mobile communications network base station, the apparatus comprising radio transmitter circuitry and processing means for processing digital signals to produce a modulating signal for the radio transmitter circuitry, wherein the processing means is configured to implement a protocol stack having a physical layer and a medium access control layer, above the physical layer, providing a plurality of transport channels which are combined to produce said modulating signal, and insert a uplink access control signal, for identifying a mobile station which is permitted to transmit, into said modulating signal in a predetermined manner.
2. An apparatus according to claim 1, wherein the transmitting apparatus is configured for TDMA operation and said access control signal is included in each burst transmitted thereby.
3. An apparatus according to claim 2, wherein said uplink access control signal occupies data bits 150, 151, 168, 169, 171, 172 174, 175, 177, 178 and 195 of each burst and each burst comprises 348 data bits.
4. An apparatus according to claim 1, wherein said uplink access control signal is spread over first to fourth consecutive bursts and uses bits 0, 51, 56, 57, 58 and 100 in the first burst, bits 35, 56, 57, 58, 84 and 98 in the second burst, bits 19, 56, 57, 58, 68 and 82 in the third burst and bits 3, 52, 56, 57, 58 and 66 in the fourth burst.
5. A method of transmitting a radio signal from a mobile communications network base station, the method comprising:
 - producing a modulating signal by combining a plurality of transport channels in a medium access control layer of a protocol stack; and
 - transmitting a radio signal modulated by said modulating signal,

wherein an uplink access control signal, for identifying a mobile station which is permitted to transmit, into said modulating signal in a predetermined manner before modulating said radio signal.

6. A method according to claim 5, wherein the radio signal comprises TDMA bursts and said access control signal is included in each burst.

7. A method according to claim 6, wherein said uplink access control signal occupies data bits 150, 151, 168, 169, 171, 172 174, 175, 177, 178 and 195 of each burst and each burst comprises 348 data bits.

8. A method according to claim 7, wherein said uplink access control signal is spread over first to fourth consecutive bursts and uses bits 0, 51, 56, 57, 58 and 100 in the first burst, bits 35, 56, 57, 58, 84 and 98 in the second burst, bits 19, 56, 57, 58, 68 and 82 in the third burst and bits 3, 52, 56, 57, 58 and 66 in the fourth burst.

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